CLAIMS

1.   A method of displaying a window on a screen wherein the window has a background through which underlying objects are visible, the method being carried out by a receiver/decoder, the receiver/decoder preferably being for use with a television set.

2.   A method according to Claim 1, further comprising drawing a frame of the window.

3.   A method according to Claim 1 or 2, wherein the window forms part of a screen comprising a window display and the method further comprises combining the window display with a video image.

4.   A method according to any of the preceding claims, further comprising displaying the window on a television screen.

5.   A method according to any of the preceding claims, further comprising the steps of:
defining the size of the window;
drawing foreground objects in the window; and
arranging the background of the window.

6.   A method of displaying a window, carried out by a receiver/decoder and comprising the steps of :
defining the size of the window;
drawing foreground objects in the window; and
arranging the background of the window such that objects underlying the background are visible.

7.   A method according to Claim 5 or 6, wherein the step of drawing foreground objects comprises setting foreground pixels to desired values.

8.   A method according to any of Claims 5 to 7, wherein the foreground objects comprise any or all of a straight line, curved line, box, circle, triangle and

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typographical character, and preferably are drawn in at least two draw operations.

9.   A method according to any of Claims 5 to 8, wherein the foreground objects comprise interactive controls.

10.   A method according to any of Claims 5 to 9, wherein the step of arranging the background comprises leaving at least one pixel value unaltered in a region defining the background.

11.   A method according to any of Claims 5 to 10, wherein the step of arranging the background comprises blending at least one pixel value with a pixel value of an underlying image, in a region defining the background.

12.   A method according to any of Claims 5 to 11, wherein the step of arranging the background comprises leaving at least one foreground pixel unaltered.

13.   A method according to any of Claims 5 to 12, wherein at least one of the objects underlying the background comprises an element of a web page.

14.   A method according to any of Claims 5 to 13, further comprising displaying a further window which has a background through which underlying objects are visible.

15.   A method according to Claim 14, wherein at least a part of the first window underlies the further window.

16.   A method according to any of the preceding claims, further comprising monitoring drawing in a further window so that drawing in the further window affecting said window can be corrected.

17.   A method of drawing in a window, the method comprising drawing in the window and monitoring the drawing so that drawing affecting an overlying window can be corrected, the method being carried out by a receiver/decoder.

18. A method according to Claim 16 or 17, further comprising determining a window which may be affected by the drawing, and sending a signal instructing a client of the window which may be affected to redraw at least part of that window.

5 19. A method according to Claim 18, wherein the signal is a Java event.

20. A method according to Claim 18 or 19, wherein the signal is sent following each drawing operation.

10 21. A method according to Claim 20, further comprising suppressing the signal for at least one drawing operation.

22. A method of drawing in a window, the method comprising providing a first mode in which a signal is sent following each drawing operation instructing a client 15 of a window which may be affected by the drawing to redraw at least part of that window, and providing a second mode in which the sending of a signal is suppressed.

23. A method according to any of Claims 18 to 22, wherein the signal is sent from a window manager.

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24. A method according to any of Claims 18 to 22, wherein the signal is sent from a client of a window, preferably sent by the client which carried out the drawing, and preferably sent to a window manager.

25 25. A method according to Claim 23 or 24, further comprising making information relating to the transparency of the window available to the window manager.

26. A method according to Claim 25, further comprising storing the information as an attribute of the window.

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27. A method according to Claim 25 or 26, further comprising sending the information to the window manager, preferably in a message or via a function call.

28. A method according to any of Claims 25 to 27, wherein the sending of a

signal is suppressed in dependence on the information.

29.   A method according to any of Claims 18 to 26, wherein the sending of a signal is suppressed in dependence on the relationship of the windows.

30.   A method according to any of Claims 18 to 29 further comprising sending a signal following a number of drawing operations, the number preferably being determined in advance of at least one drawing operation, and preferably being greater than 1, 3, 5, 10, 30, 50 or 100.

31.   A method according to any of Claims 16 to 30, further comprising redrawing at least part of the window which may be affected.

32.   A method of drawing in a windowing system in which drawing in a window is monitored and a signal is sent to at least one other window which may be affected by the drawing, the method further comprising selecting a mode in which a signal to at least one other window is suppressed for at least one drawing operation.

33.   A method according to Claim 32, further comprising selecting a mode in which a signal is sent to said at least one other window, following said at least one drawing operation.

34.   A method according to Claim 32 or 33 wherein the signal is a signal instructing a client of a window that may be affected by the drawing to redraw at least part of that window.

35.   A method of displaying a window, comprising providing a window manager which manages the display of the window, and passing information relating to the transparency of the window to the window manager.

36.   A method according to Claim 35, wherein the window manager forms part of a virtual machine.

37.   A method of displaying a navigator display, preferably for a web browser,

wherein the navigator display comprises at least one window having a transparent background.

38.   A method according to Claim 37, wherein the method is carried out by a
5   receiver/decoder, the receiver/decoder preferably being for use with a television set.

39.   A method of displaying windows on a screen, the method being carried ·
out by a receiver/decoder and comprising the steps of: –

displaying first and second windows, at least the first window having a
10   background through which underlying objects are visible;

determining whether the first window overlaps the second window;

drawing in the second window; and

redrawing at least part of the first window if the first window overlaps the second
window.

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40.   A receiver/decoder comprising means (typically in the form of a
processor) for displaying a window on a screen, wherein the window has a background
through which underlying objects are visible, the receiver/decoder preferably being for
use with a television set.

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41.   A receiver/decoder according to Claim 41, further comprising means
(typically in the form of a processor) for drawing a frame of the window.

42.   A receiver/decoder according to Claim 40 or 41, wherein the displaying
25   means is adapted to display a window which forms part of a screen comprising a window
display, and further comprising means for combining the window display with a video
image.

43.   A receiver/decoder according to any of Claims 40 to 42, wherein the
30   displaying means is adapted to display the window on a television screen.

44.   A receiver/decoder according to any of Claims 40 to 43, further
comprising:

means (typically in the form of a processor) for defining the size of the window;

means (typically in the form of a processor) for drawing foreground objects in the window; and

means (typically in the form of a processor) for arranging the background of the window.

45.   A receiver/decoder comprising:

means (typically in the form of a processor) for displaying a window;

means (typically in the form of a processor) for defining the size of the window;

means (typically in the form of a processor) for drawing foreground objects in the window; and

means (typically in the form of a processor) for arranging the background of the window such that objects underlying the background are visible.

46.   A receiver/decoder according to Claim 44 or 45, wherein the means for drawing foreground objects is adapted to set foreground pixels to desired values.

47.   A receiver/decoder according to any of Claims 44 to 46, wherein the foreground objects comprise any or all of a straight line, curved line, box, circle, triangle and typographical character, and preferably are adapted to be drawn in at least two draw operations.

48.   A receiver/decoder according to any of Claims 44 to 47, wherein the foreground objects comprise interactive controls.

49.   A receiver/decoder according to any of Claims 44 to 48, wherein the arranging means is adapted to leave at least one pixel value unaltered in a region defining the background.

50.   A receiver/decoder according to any of Claims 44 to 49, wherein the arranging means is adapted to blend at least one pixel value with a pixel value of an underlying image, in a region defining the background.

51.   A receiver/decoder according to any of Claims 44 to 50, wherein the arranging means is adapted to leave at least one foreground pixel unaltered.

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52.   A receiver/decoder according to any of Claims 44 to 51, wherein at least one of the objects underlying the background comprises an element of a web page.

53.   A receiver/decoder according to any of Claims 44 to 52, further comprising means (typically in the form of a processor) for displaying a further window which has a background through which underlying objects are visible.

54.   A receiver/decoder according to Claim 53, wherein at least a part of the first window underlies the further window.

55.   A receiver/decoder according to any of the preceding claims, further comprising means (typically in the form of a processor) for monitoring drawing in a further window so that drawing in the further window affecting said window can be corrected.

56.   A receiver/decoder, comprising:

means for drawing in a window; and

means for monitoring the drawing so that drawing affecting an overlying window can be corrected.

57.   A receiver/decoder according to Claim 55 or 56, further comprising means for determining a window which may be affected by the drawing, and for sending a signal instructing a client of the window which may be affected to redraw at least part of that window.

58.   A receiver/decoder according to Claim 57, wherein the signal is a Java event.

59.   A receiver/decoder according to Claim 57 or 58, wherein the signal is sent following each drawing operation.

60.   A receiver/decoder according to Claim 59, further comprising means for suppressing the signal for at least one drawing operation.

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61.   A receiver/decoder comprising means for drawing in a window, in first and second modes, wherein in the first mode a signal is sent following each drawing operation instructing a client of a window which may be affected by the drawing to redraw at least part of that window, and in the second mode the sending of a signal is
5   suppressed.

62.   A receiver/decoder according to any of Claims 57 to 61, wherein the signal is sent from a window manager.

10   63.   A receiver/decoder according to any of Claims 57 to 61, wherein the signal is sent from a client of a window, and is preferably sent by the client which carried out the drawing, and is preferably sent to a window manager.

64.   A receiver/decoder according to Claim 62 or 63, further comprising means
15   for making information relating to the transparency of the window available to the window manager.

65.   A receiver/decoder according to Claim 64, further comprising means for storing the information as an attribute of the window.

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66.   A receiver/decoder according to Claim 64 or 65, further comprising means for sending the information to the window manager, preferably in a message or via a function call.

25   67.   A receiver/decoder according to any of Claims 64 to 66, wherein the sending of a signal is suppressed in dependence on the information.

68.   A receiver/decoder according to any of Claims 57 to 66, wherein the sending of a signal is suppressed in dependence on the relationship of the windows.

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69.   A receiver/decoder according to any of Claims 57 to 68, further comprising means for sending a signal following a number of drawing operations, the number preferably being determined in advance of at least one drawing operation, and preferably being greater than 1, 3, 5, 10, 30, 50 or 100.

70.   A receiver/decoder according to any of Claims 55 to 69, further
comprising means for redrawing at least part of the window which may be affected.

71.   Apparatus for drawing in a windowing system, comprising:

5   means (typically in the form of a processor) for drawing in a window;

means (typically in the form of a processor) for monitoring the drawing in the
window and for sending a signal to at least one other window which may be affected by
the drawing; and

means (typically in the form of a processor) for selecting a mode in which a signal
10 to at least one other window is suppressed for at least one drawing operation.

72.   Apparatus according to Claim 71, further comprising means for selecting
a mode in which a signal is sent to said at least one other window, following said at least
one drawing operation.

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73.   Apparatus according to Claim 71 or 72 wherein the signal is a signal
instructing a client of a window that may be affected by the drawing to redraw at least
part of that window.

20   74.   Apparatus for displaying a window, comprising:

means (typically in the form of a processor) for displaying the window;

a window manager for managing the display of the window; and

means (typically in the form of a processor) for passing information relating to
the transparency of the window to the window manager.

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75.   Apparatus according to Claim 74, wherein the window manager forms part
of a virtual machine.

76.   Apparatus for displaying a navigator display, comprising means (typically
30 in the form of a processor) for displaying the navigator display in such a way that the
navigator display comprises at least one window having a transparent background.

77.   A receiver/decoder comprising apparatus according to Claim 76.

78.   A television system, comprising a receiver/decoder according to Claim 77 and a television set connectable to the receiver/decoder.

79.   A television system, comprising a receiver/decoder according to Claim 77
5   and a television set connected to the receiver/decoder.

80.   A receiver/decoder for displaying windows on a screen, comprising:
       means (typically in the form of a processor) for displaying first and second windows, at least the first window having a background through which underlying
10   objects are visible;
       means (typically in the form of a processor) for determining whether the first window overlaps the second window;
       means (typically in the form of a processor) for drawing in the second window; and
15   means (typically in the form of a processor) for redrawing at least part of the first window if the first window overlaps the second window.

81.   A computer program product for use with a receiver/decoder, said computer program product (under the control of the program) comprising code for
20   displaying a window on a screen, wherein the window has a background through which underlying objects are visible, the receiver/decoder preferably being for use with a television set.

82.   A computer program product according to Claim 81, further comprising
25   code for drawing a frame of the window.

83.   A computer program product according to Claim 81 or 82, wherein the displaying code is adapted to display a window which forms part of a screen comprising a window display, and further comprising code for combining the window display with
30   a video image.

84.   A computer program product according to any of Claims 81 to 83, wherein the displaying code is adapted to display the window on evision screen.

85. A computer program product according to any of Claims 81 to 84, further comprising:

    code for defining the size of the window;

    code for drawing foreground objects in the window; and

5   code for arranging the background of the window.

86. A computer program product comprising:

    code for displaying a window;

    code for defining the size of the window;

10   code for drawing foreground objects in the window; and

    code for arranging the background of the window such that objects underlying the background are visible.

87. A computer program product according to Claim 85 or 86, wherein the

15 code for drawing foreground objects is adapted to set foreground pixels to desired values.

88. A computer program product according to any of Claims 84 to 87, wherein the foreground objects comprise any or all of a straight line, curved line, box, circle, triangle and typographical character, and preferably are adapted to be drawn in at least

20 two draw operations.

89. A computer program product according to any of Claims 84 to 88, wherein the foreground objects comprise interactive controls.

25   90. A computer program product according to any of Claims 84 to 89, wherein the arranging code is adapted to leave at least one pixel value unaltered in a region defining the background.

91. A computer program product according to any of Claims 84 to 90, wherein

30 the arranging code is adapted to blend at least one pixel value with a pixel value of an underlying image, in a region defining the background.

92. A computer program product according to any of Claims 84 to 91, wherein the arranging code is adapted to leave at least one foreground pixel unaltered.

93.   A computer program product according to any of Claims 84 to 92, wherein at least one of the objects underlying the background comprises an element of a web page.

5   94.   A computer program product according to any of Claims 84 to 93, further comprising code for displaying a further window which has a background through which underlying objects are visible.

95.   A computer program product according to Claim 94, wherein at least a part of the first window underlies the further window.

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96.   A computer program product according to any of the preceding claims, further comprising code for monitoring drawing in a further window so that drawing in the further window affecting said window can be corrected.

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97.   A computer program product, comprising:
code for drawing in a window; and
code for monitoring the drawing so that drawing affecting an overlying window can be corrected.

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98.   A computer program product according to Claim 96 or 97, further comprising code for determining a window which may be affected by the drawing, and for sending a signal instructing a client of the window which may be affected to redraw at least part of that window.

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99.   A computer program product according to Claim 98, wherein the signal is a Java event.

100.   A computer program product according to Claim 98 or 99, wherein the signal is sent following each drawing operation.

101.   A computer program product according to Claim 100 further comprising code for suppressing the signal for at least one drawing operation.

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102.   A computer program product comprising code for drawing in a window, in first and second modes, wherein in the first mode a signal is sent following each drawing operation instructing a client of a window which may be affected by the drawing to redraw at least part of that window, and in the second mode the sending of a signal is
5   suppressed.

103.   A computer program product according to any of Claims 98 to 102, wherein the signal is sent from a window manager.

104.   A computer program product according to any of Claims 98 to 102,
10   wherein the signal is sent from a client of a window, and is preferably sent by the client which carried out the drawing, and is preferably sent to a window manager.

105.   A computer program product according to Claim 103 or 104, further
15   comprising code for making information relating to the transparency of the window available to the window manager.

106.   A computer program product according to Claim 105, further comprising code for storing the information as an attribute of the window.

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107.   A computer program product according to Claim 105 or 106, further comprising code for sending the information to the window manager, preferably in a message or via a function call.

25   108.   A computer program product according to any of Claims 105 to 107, wherein the sending of a signal is suppressed in dependence on the information.

109.   A computer program product according to any of Claims 98 to 107, wherein the sending of a signal is suppressed in dependence on the relationship of the
30   windows.

110.   A computer program product according to any of Claims 98 to 109, further comprising code for sending a signal following a number of drawing operations, the number preferably being determined in advance of at least one drawing operation, and

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preferably being greater than 1, 3, 5, 10, 30, 50 or 100.

111.   A computer program product according to any of Claims 96 to 110, further comprising code for redrawing at least part of the window which may be affected.

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112.   Apparatus for drawing in a windowing system, comprising:

code for drawing in a window;

code for monitoring the drawing in the window and for sending a signal to at least one other window which may be affected by the drawing; and

10   code for selecting a mode in which a signal to at least one other window is suppressed for at least one drawing operation.

113.   Apparatus according to Claim 112, further comprising code for selecting a mode in which a signal is sent to said at least one other window, following said at least

15 one drawing operation.

114.   Apparatus according to Claim 112 or 113 wherein the signal is a signal instructing a client of a window that may be affected by the drawing to redraw at least part of that window.

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115.   Apparatus for displaying a window, comprising:

code for displaying the window;

a window manager for managing the display of the window; and

code for passing information relating to the transparency of the window to the

25 window manager.

116.   Apparatus according to Claim 115, wherein the window manager forms part of a virtual machine.

30   117.   Apparatus for displaying a navigator display, comprising code for displaying the navigator display in such a way that the navigator display comprises at least one window having a transparent background.

118.   A computer program product for displaying windows on a screen,

comprising:

code for displaying first and second windows, at least the first window having a background through which underlying objects are visible;

code for determining whether the first window overlaps the second window;

5   code for drawing in the second window; and

code for redrawing at least part of the first window if the first window overlaps the second window.

119.   A computer program product comprising a memory and processor, the
10   memory having stored therein an application, and the processor (under the control of the application) being adapted to carry out the method as claimed in any of Claims 1 to 39.

120.   A computer program product comprising a program for carrying out the method as claimed in any of Claims 1 to 39.

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121.   A computer readable medium having stored thereon a program for carrying out the method as claimed in any of Claims 1 to 39.

122.   A computer readable medium having stored thereon a computer program
20   product as claimed in any of Claims 80 to 120.

123.   A signal tangibly embodying a computer program product as claimed in any of Claims 80 to 120.

25   124.   A method substantially as described with reference to and illustrated in the accompanying drawings.

125.   Apparatus substantially as herein described with reference to and as illustrated in the accompanying drawings.